

**An Interpretation of the Complex X-ray Spectra
Observed for Certain Petroleum Cokes
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Calcined petroleum coke generally produces a broad (002) diffraction peak when examined by x-ray diffraction. Upon heat-treatment to higher temperatures where the onset of the graphitization reactions take place, this broad (002) diffraction peak becomes more complex and eventually is resolved into two peaks. One of the peaks is a well defined x-ray peak and corresponds to that of graphite. The other peak is very broad and more intense than the first peak. The broad peak appears to be due to the bulk of the material and resembles the peak observed for the calcined coke. Upon heat-treatment to graphitization temperatures the two peaks again become one.

In this paper an interpretation of the complex x-ray spectra obtained from certain petroleum cokes when they are heat-treated above the normal calcination temperature will be presented. The rapid release of volatile impurities coupled with the irreversible thermal expansion which is known to take place over the same temperature interval will be discussed in relation to the x-ray spectra. (25 minutes).